Rana University
Faculty of Science
Computer Science Department

Course Title	**System Networking**
Lecturer Name	**Baitullah Paktin**
Credit Hours	**4**
Lecture Days	**Saturday-Tuesday**
Lecture Timing	**Early Morning/Evening**
Class No.	**203**

Course Description

The System Networking course is introduced to equip students with the knowledge of System Administration. We will implement this course using the Microsoft Server 2012 R2 which is the latest version of server in Microsoft platform. This course will include the main contents of Microsoft MCSE course which includes the following topics:

- ✓ AD DS Configuration and Administration
- ✓ AD Backup and Restoration
- ✓ DHCP & DNS Server Configuration and Administration
- ✓ File Server, FTP Server, DFS & Print Server installation and Configurations
- ✓ VPN Configuration …et

Course Objective

The main objective of the course is to equip the students with the knowledge of System Administration using Windows Server 2012 R2. By the completion of this course the students will be able to design, configure and troubleshoot a small to medium size .network

Teaching Method

- Lecture/Explanation/short notes
- Previous lesson's review
- Discussion
- Questioning
    - Hands-on/Inquiry
- Presentations
    - Cooperative groups
    - Other _____

Learning Outcome

:By the end of the course, students will be able to

1. AD installation and configuration
2. Setting IP addresses.
3. AD users and group account management
4. VPN installation and configuration
5. AD backup and restoration
6. GPO management
7. Software installation using GPO
8. Installing and managing the DNS server.
9. Illustrate Apache DFS and File Server along with its installation process.
10. Configuring FTP server.
11. Install DHCP and its configuration.

Course Plan

Weeks	Chapters	Teaching Method	Remarks
1	Introduction of the course: - Introduction to the course - Introduction to network & internetwork - Introduction to Server 2012: - Hardware requirements - Editions - New features - Windows Server 2012 R2 Installation	Theory + Practical	homework
2	**Introduction to Active Directory** - Introduction to Active Directory - DNS - Domain - Domain Controller - User accounts, Group Accounts & OUs - Local and domain users	Theory + Practical	homework
3	**AD installation, configuration and Users, Groups & OU management :** - AD requirements - AD & DNS Installation - Creating AD Objects ▪ Users ▪ Groups ▪ OUs	Theory + Practical	homework
4	**Joining Clients to Domain & Managing AD objects using Windows PowerShell** - Joining a client to the domain - Remote Desktop connection - Introduction to Windows Power	Theory + Practical	homework

	Shell - Difference between Power Shell & Power Shell ISE - Managing AD objects using Power Shell - **COMPUTER LAB (STUDENTS PRACTICE)**		
5	**Managing GPOs:** - Introduction to GPO - Local and domain group policies - Working with the following GPO: o Prevent Access to control panel o Deny removable storage o Desktop wallpaper o Deny changing desktop wallpaper o Allow logon locally - Default domain policies - Domain Controllers policies - **COMPUTER LAB (STUDENTS PRACTICE)**	Theory + Practical	homework
6	**DCHP Server installation & configuration:** - Introduction to DHCP - Static and Dynamic IP configuration - Benefits of DHCP - DORA Process & DHCP Scope - DHCP Lease duration - DHCP Reservation - DHCP authorization - DHCP Scope activation - DHCP installation and configuration - **COMPUTER LAB (STUDENTS PRACTICE)**	Theory + Practical	homework
7	**File Server & DFS configuration along with NTFS permissions:** - Introduction to file server - NTFS Permissions - Shared Level Permissions - Basic data sharing - Mapping Network drive manually - DFS - Mapping Network Drive using GPO - DFS Installation and configuration - **COMPUTER LAB (STUDENTS PRACTICE)**	Theory + Practical	homework
8	**Remote Software installation using GPO & Print Server configuration** - Remote software installation - Software installation using	Theory + Practical	homework

	GPO - Print server - Local and network printer - Print server configuration - Printer permissions - **COMPUTER LAB (STUDENTS PRACTICE)**		
	MID TERM EXAMINATION		
9	**DNS Server (Theory)** - Introduction to DNS - DNS Components - DNS Namespace - DNS Query a. Recursive query b. Iterative query - DNS forwarders a. Standard forwarder b. Conditional forwarder - DNS cache - DNS Zones a. Forward lookup zone b. Reverse lookup zone - DNS Zone transfer - Other zone types - DNS database (DNS records)	Theory + Practical	homework
10	**DNS Server installation, configuration & DNS zone transfer** - DNS Installation - DNS Configuration - Configuration of DNS Forwarders - Creating DNS Zones - Secondary DNS Server and DNS zone transfer - **COMPUTER LAB (STUDENTS PRACTICE)**	Theory + Practical	homework
11	**Windows Server 2012 Backup & AD backup** - Windows server backup - WBAdmin backup - NTDSUtil backup - Windows server back installation and backing up data and AD database	Theory + Practical	homework
12	**AD restoration** - AD restoration - Non-Authoritative restoration - Authoritative restoration - USN Number - **COMPUTER LAB (STUDENTS PRACTICE)**	Theory + Practical	homework
13	**FTP server installation & configuration** - Introduction to FTP Server - Installation of FTP Server - Configuration of FTP Server - User account and Password policies - Configuration of user account	Theory + Practical	homework

	and password policies - **COMPUTER LAB (STUDENTS PRACTICE)**		
14	**VPN Server & Delegation of Control:** - Introduction to VPN - VPN requirements - Remote Access Installation - VPN Configuration - Delegation of control - AD Permissions - **COMPUTER LAB (STUDENTS PRACTICE)**	Theory + Practical	homework
15	**NIC Teaming & RODC configuration:** - Introduction to RODC - RODC application - RODC installation - RODC Configuration - NIC teaming - **COMPUTER LAB (STUDENTS PRACTICE)**	Theory + Practical	homework
16	**Overall Review & Quiz:** - Overall review of the lectures - QUIZ	Theory + Practical	homework
Reference	MCSA Windows Server 2012 Complete Study Guide: Exams 70-410, 70-411, 70-412		

Class Discipline

To maintain control and manage the classroom properly I'm applying the following rules and discipline in my classes.

- Trying to include rules on my syllabus.
- Talk about my rules on the first day of class
- Trying to know students by name.
- Trying to act professionally.
- Exploring the discipline issue before acting.

Assessment Method

A useful beginning point in determining the optimum mix of assessment methods is the resources and I select the

Following assessment method.

- Independent Work
- Guided Instruction
  - Practice Sheets
- Project/Presentation
  - Conference with students
  - Test/Quiz
  - Other _____

Exam Method

Not allowing the students to whisper during the exam. (if catcht the place will be - changed)

.Cheating by any means the paper will be canceled -

.Not allowing to use cell phone, mobile, tablets …etc-

.Exam will be conducted written -

Prepared by:

Approved by

Baitullah Paktin

Fardin